Gideon Manning, ed. *Matter and Form in Early Modern Science and Philosophy*.

History of Science and Medicine 28; Scientific and Learned Cultures and Their Institutions 6. Leiden: Brill, 2012. x + 248 pp. $144. ISBN: 978-90-04-21870-3.

This volume, mainly intended for historians and philosophers of science, aims at reappraising the traditional definition of the seventeenth-century New Science as excluding the Aristotelian notion of matter and form. At the time of the so-called Scientific Revolution, matter and form were indeed far from being entirely rejected,

as they shape the normative framework of early modern natural philosophy and metaphysics. As presented in the first introductory paper, the matter and form terminology was not only inescapable, but implied a plurality of meanings and cross-disciplinary fields. These numerous acceptions of matter and form, gathered under the recent term of *hylomorphism*, are thus examined throughout nine contributions on a vast range of disciplines: physics, psychology, chymistry, physiology, ontology, and theology. Such approaches of hylomorphism encompass traditional Scholastic philosophers like Toletus, the Coimbra commentator, Suarez, and Dupleix, as well as seventeenth-century *novatores* like Sennert, Descartes, and Leibniz.

The sum of the contributions provides a coherent structure centered on three main topics. First, the book looks at the amalgamation of hylomorphism with competing views on matter and change that contributed to the development of corpuscularianism, namely early modern atomism and alchemy. Second, it explores the medical context of hylomorphism through the mutual dependence of body and soul, with two major issues: the emergence of psychology as an early modern discipline using anatomical knowledge, and the physiological functions of the soul animating the organic living body. Third, it surveys the Cartesian and Leibnizian approaches of unity and individuation concerning their respective reception of the substantial form.

Moreover, each contribution supplies a continuous thread throughout the book. After the opening survey on hylomorphic lexicography (Gideon Manning), matter and form are correlated to body and soul through the resort to anatomy in Jesuit and Philippist Scholastic psychology, testifying to the early modern eclectic pervasiveness of medicine in the initially Aristotelian science of the soul (Michael Edwards). In turn, the relation between soul and substantial form is examined in Daniel Sennert's theory of spontaneous generation (Hiro Hirai). The following paper discusses Sennert's concept of matter in his explanation of chymical affinities and vinegar fermentation (William Newman). Both contributions on Sennert remarkably emphasize the conditions under which he integrated hylomorphism into his Democritean chymical theory. They also address the issue of the interaction among hylomorphism, chymistry, and medicine regarding the physiological phenomena of generation and digestion. In contrast to Sennert, Leibniz provided an interpretation of the corporeal functions of the soul based on a mechanistic theory of nutrition, adapting the Renaissance notion of innate heat and chymical fermentation (Justin Smith).

Subsequently, the Cartesian part of the volume is focused on hylomorphic, atomistic, and corpuscular views on matter and form in the second half of the seventeenth century. The fifth contribution explores the remains of the Suarezian-inspired "substantial forms as efficient causes of special bodily actions" (148) in Descartes's thought (Ted Schmaltz). The following paper surveys the repercussions of Descartes's dismissal of hylomorphism on the repartition of animate living functions in his mechanized psychology and physiology, deflecting the Aristotelian and Galenic tradition (Gary Hatfield). The next contribution is a worthy clarification of the seventeenth-century debate on matter and form "towards a more dualistic and

less hylomorphic metaphysics" (188) in the context of Descartes's position in the quarrel between Scholastics and atomists (Roger Ariew). It also opens up the problem of individuation in the Cartesian philosophy as rooted in the medieval debate between Scotists and Thomists. The last paper concludes the study with the pre-monadological resort to the substantial form as a principle of unity and motion in Leibniz's early philosophy (Daniel Garber).

Though the contributions are centered on the seventeenth-century reception of matter and form, they provide a broader contextualization of late medieval and Renaissance hylomorphism. However, it is regrettable that most surveys focus on canonical figures, namely Descartes and Leibniz, thus not exploring lesser-known scholars overlooked by the traditional historiography. Nonetheless this volume is a valuable contribution to the current research on early modern matter theories and psychology, with a special emphasis on life sciences in the shape of early modern atomism and corpuscularianism.

ELISABETH MOREAU
Fonds de la Recherche Scientifique — FNRS / Université Libre de Bruxelles